

Material Name: **accuGen 100 Nd**

I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product/Trade Name: **accuGen™ 100 Nd**

System/Laser Compatibility: For SLA® systems equipped with solid-state (Nd:YVO₄) lasers.
 Chemical Family: Epoxy resin containing reactive diluent
 Product Use: Material for SLA series stereolithography systems.

Manufacturer:



Manufacturer Contact	3D Systems GmbH Guerickeweg 9 Darmstadt, Germany
For Information	Phone: +49 (0) 6151 357-357 Fax: +49 (0) 6151 357-111
Emergency	703.527.3887 - Chemtrec (U.S.)

Hazardous Materials Identification System (HMIS):

(Degree of hazard: 0 = low, 4 = extreme);

Health **2**
 Flammability **1**
 Physical Hazards **1**

Personal Protection:

Skin, eye protection

II. COMPOSITION INFORMATION

EC #	Component	Classification	Percent
238-098-4	Cyclohexane dimethanol diglycidyl ether (CAS# 14228-73-0)	Xi R36/38 R43 R52/53	9 - 19
Mixture 203-572-1 403-500-0	Mixture 50% Propylene Carbonate (CAS#108-32-7) 50% Mixture antimonate salts (CAS#89452-37-9, 71449-78-0)	- Xi R36 Xi R43, N R50/53	3 - 10

General Product Information

This preparation is classified as hazardous according to European Union Directives 67/548/EEC and 99/45/EC.
 Xi R36, R43 N R51/53

III. HAZARDS IDENTIFICATION

Emergency Overview

This material is an irritant. Causes eye irritation. Causes skin irritation. Can cause allergic skin reaction. Toxic to aquatic organisms. Do not release to the aquatic environment. Hazardous polymerization can occur upon depletion of inhibitor or exposure to heat or UV light. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Potential Health Effects:

Eyes: Can cause irritation consisting of redness, swelling and pain.
 Skin: Can cause irritation or other allergic reactions, including redness and/or swelling.
 Inhalation: Can cause respiratory irritation.
 Ingestion: Ingestion can cause nausea, diarrhea and/or stomach pain.
 Chronic: Can cause an allergic skin reaction with repeated or prolonged exposure consisting of redness, swelling and/or rash (urticaria).

Medical Conditions Aggravated by Exposure

Could irritate an existing dermatitis or respiratory condition.



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IV. FIRST AID MEASURES

- Skin contact:** Immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse.
- Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists. Avoid exposure to light sources.
- Inhalation:** Move affected person to fresh air. In case of asphyxia, initiate artificial respiration immediately. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion:** Ingestion is unlikely. However, if large quantities are swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Notes to Physician

Allergic dermatitis in susceptible individuals may be delayed. It may appear after weeks or even months of frequent and prolonged contact.

V. FIRE FIGHTING MEASURES

- | | |
|------------------------------------|---------------------------------|
| Flash Point: 183 °C (361 °F) | Method Used: NA |
| Upper Flammable Limit (UFL): NA | Lower Flammable Limit (LFL): NA |
| Auto Ignition: >360 °C (DIN 51794) | Rate of Burning: NA |
| Sustains Combustion: NA | Flammability Classification: NA |

- General Fire Hazards:** Inhibitor depletion caused by exposure to heat, radiation or oxidizers can cause spontaneous polymerization generating heat and pressure.
- Hazardous Combustion Products:** Thermal decomposition products can include CO₂, CO, NO_x and smoke.
- Extinguishing Media:** Use water mist, dry chemical, carbon dioxide, or chemical foam. Avoid the use of a stream of water to control fire since frothing can occur.
- Fire Fighting Equipment/Instructions:** Wear full protective clothing, including helmet, self-contained positive-pressure or pressure-demand breathing apparatus, protective clothing and facemask. Move container from area if it can be done without risk. Cool containers with water spray. Do not use high-volume water jet. Avoid inhalation of material or combustion by-products.

VI. ACCIDENTAL RELEASE MEASURES

- Containment Procedures:** Stop the flow of material, if this is without risk. Ventilate contaminated area. Eliminate sources of ignition. Do not release material or contaminated water into drains, soil or surface waters.
- Clean-Up Procedures:** Wear appropriate protective equipment and clothing. Absorb spillage with non-combustible absorbent materials. Place all waste in an appropriate container for disposal.
- Evacuation Procedures:** Keep unnecessary personnel away.
- Special Procedures:** NA

VII. HANDLING AND STORAGE

- Handling Procedures:** Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or mist. Avoid ignition sources.
- Storage Procedures:** Store sealed in the original container at room temperature. Keep this material indoors in a cool, dry, well-ventilated place. Store out of direct sunlight or UV light sources.
- Storage Temperature:** 0 °C – 35 °C / 32 °F – 95 °F

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

- General Product Information:** No occupational exposure limits have been established for this product or its components.
- Substance Exposure Limits:** Check local regulations in case different limits apply.

Engineering Controls

Ventilation must effectively remove any vapours.

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PERSONAL PROTECTIVE EQUIPMENT

- Eyes/Face: Wear chemical goggles or face shield.
 Skin: Use impervious gloves, an apron, and closed shoes.
 Respiratory: If ventilation cannot effectively keep vapour concentrations below established limits, appropriate certified respiratory protection must be provided.
 General: An eye wash fountain and safety shower are recommended.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Slightly yellow	Odor	Mild
Physical State.....	Liquid	PH	6-7 at 1:1 in Water
Vapour Pressure	< 2 Pa @ 20 °C (68 °F)	Flash Point	183 °C (361 °F) (DIN 51758)
Boiling Point	>200 °C (>392 °F)	Viscosity.....	500-600 mPa*s at 30 °C
Solubility (H ₂ O)	Insoluble @ 20 °C (68 °F)	Density	1.1 g/cm ³ at 25 °C
Percent Volatile	NA	Molecular Weight.....	NA

X. CHEMICAL STABILITY AND REACTIVITY

- Chemical Stability: Stable under normal conditions of handling, use and transportation.
 Conditions to Avoid: Avoid exposure to heat, light.
 Incompatibility: Oxidizing materials, strong acids and strong bases.
 Hazardous Decomposition: Thermal decomposition products can include CO₂, CO, NOx, and smoke.
 Hazardous Polymerization: May occur.
 Thermal Decomposition: >200 °C

XI. TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

- A: General Product Information: No data available.
 B: Component Analysis:

Component	LD ₅₀ Oral	LD ₅₀ Dermal
Cyclohexane dimethanol diglycidyl ether (CAS# 14228-73-0)	>2000 mg/Kg (rats)	No data from supplier
Antimonate Mixture	>2000 mg/Kg (rats)	>2000 mg/Kg (rabbits)

Carcinogenicity

- A: General Product Information: None.
 B: Component Carcinogenicity: Neither this product, nor any of its components are known to be listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

XII. ECOLOGICAL INFORMATION

Ecotoxicity

- A: General Product Information: The aquatic toxicity of the product is unknown; however based on components, it is predicted that this material may be toxic to aquatic organisms or cause long-term adverse effects in the aquatic environment. Prevent contamination of soil drains and surface waters.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity:

Component	EC ₅₀ 24 hours	EC ₅₀ 48 hours
Antimonate Mixture	4.4 mg/L (Daphnia magna)	0.68 mg/L (Daphnia magna)

Component	LC ₅₀ 96 hours
Cyclohexane dimethanol diglycidyl ether (CAS# 14228-73-0)	13mg/L (Carp)

Environmental Fate: No information available for product.

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XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Instructions

Do not contaminate drains, soil or surface waters with the material or its container. Avoid disposal. Attempt to utilize product completely. Dispose of in compliance with all applicable regulations. Prior to disposal of unused material, consult an approved waste disposal operative to ensure regulatory compliance.

XIV. TRANSPORT INFORMATION

	US DOT	RID/ADR	IMDG	IATA	IMO	Canada TDG
Shipping Name	Not Regulated					

XV. REGULATORY INFORMATION

European Union Regulatory Information

General Product Information

- N Dangerous for the environment.
 - Xi Irritant.
 - R36 Irritating to eyes.
 - R43 May cause sensitisation by skin contact.
 - R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 - S24/25 Avoid contact with skin and eyes.
 - S61 Avoid release to the environment. Refer to special instructions/safety data sheets.
- Contains: Cyclohexane dimethanol diglycidyl ether (238-098-4), antimony compound (403-500-0).

Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA	NLP
Cyclohexane dimethanol diglycidyl ether (CAS# 14228-73-0)	238-098-4	EINECS	DSL	Yes	No
Antimonate Mixture	Mixture				
Propylene Carbonate (CAS#108-32-7)	203-572-1	EINECS	DSL	Yes	No
Mixture antimonate salts (CAS#89452-37-9, 71449-78-0)	403-500-0	EINECS	NDSL	Yes	No

XVI. ADDITIONAL INFORMATION

Full text of all Risk Phrases in Sections 2 & 3

EC#	Component/CAS	Classification
238-098-4	Cyclohexane dimethanol diglycidyl ether (CAS# 14228-73-0)	Xi Irritant. R36/38 Irritating to eyes and skin. R43 May cause sensitisation by skin contact. R52/53 harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.
Mixture	Mixture	-
203-572-1	50% Propylene Carbonate (CAS#108-32-7)	Xi Irritant. R36 Irritating to eyes.
403-500-0	50% Mixture antimonate salts (CAS#89452-37-9, 71449-78-0)	Xi Irritant. R43 May cause sensitisation by skin contact. N Dangerous for the environment. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Material Name: **accuGen 100 Nd**

MSDS Creation Date: 25.01.06

MSDS Revision #: NA

MSDS Revision Date:..... NA

Reason for Revision: NA

For more information: www.3dsystems.com

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Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

CPR = Controlled Products Regulations

DOT = Department of Transportation

DSL = Domestic Substances List

EINECS = European Inventory of Existing Commercial Chemical Substances

EPA = Environmental Protection Agency

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IDL = Ingredients Disclosure List

IEL = Internal Exposure Limit

mg/Kg = milligrams per Kilogram

mg/L = milligrams per Liter

mg/m³ = milligrams per Cubic Meter

MSHA = Mine Safety and Health Administration

NA = Not Applicable or Not Available

NIOSH = National Institute for Occupational Safety and Health

NJTSTR = New Jersey Trade Secret Registry

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

SARA = Superfund Amendments and Reauthorization Act

STEL = Short Term Exposure Limit

TDG = Transport Dangerous Goods

TSCA = Toxic Substances Control Act

WHMIS = Workplace Hazardous Materials Information System.